

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 0-1
Flugzeugbau GmbH			Edition 1.1.83

FLIGHT MANUAL

Edition for Italy

For the sailplane type LS4

This Flight Manual should be carried in the sailplane at all times.

This Flight Manual is issued for the sailplane LS4

Registration Number I - UKSI

Serial Number 4706

Manufacturer Rolladen Schneider Flugzeugbau GmbH
Mühlstrasse 10, 6073 Egelsbach, Germany

Owner Paolo Mion
c. so Vittorio Emanuele 200
I - 10100 Torino

Convalidato dal RACCOMANDO ITALIANO
ed allegato al Certificato diimmatricolazione
rilasciato in data 8-9-1988



Because of responsibility of information a change of ownership should be reported to the manufacturer immediately.

Approval of translation has been done by best knowledge and judgement - In any case the original text in German language is authoritative.

Pages 1-1 through 3-13 approved by Luftfahrt-Bundesamt



17. Feb. 1983

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 0-2
Flugzeugbau GmbH	Table of Contents		Edition 15.12.83

Cover Page	Page 0-1
Table of Contents	0-2 - 0-4
List of Pages	0-5 - 0-6
OPERATING LIMITATIONS	
General	1-1
Airspeed Limits	1-2
Position Error of Airspeed System	1-3
Colour Marking on Airspeed Indicator	1-4
Weights	1-5
Position of C.G. in Flight	1-6
Cockpit Load	1-7
Water Ballast Limitations	1-8 - 1-9
Baggage Limitations	1-10
Weight Compensation for Pilots not meeting Minimum Weight Requirements	1-10
Tire Pressure	1-10
Limit Maneuvering Load Factors	1-11
VFR Flight and Cloud Flying	1-11
Minimum Equipment	1-11

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 0-3
Flugzeugbau GmbH	Table of Contents		Edition 1.1.83

Break Away Link in Tow Rope	Page 1-11
Sideslip	1-12

EMERGENCY PROCEDURES

Stalls	2-1
Spins	2-1
Limitation of High Speed Flight	2-2
Emergency Canopy Release	2-2
Rain	2-3
Icing	2-3

NORMAL PROCEDURES

Assembly and Disassembly	3-1 - 3-3
Pre-flight Checks	3-4
Post-flight Checks	3-5
Adjustment of Rudder Pedals	3-5
Adjustment of Backrest	3-5
Automatic Parachute Static Line	3-6

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 0-4
Flugzeugbau GmbH	Table of Contents		Edition 1.1.83

Landing Gear	Page 3-6
Wheel Brake	3-6
Trim System	3-7
Water Ballast	3-8
Winch Launch	3-9
Aero Tow	3-10
Free Flight	3-11
Landing	3-12
High Altitude Flights	3-13

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 0-5
Flugzeugbau GmbH	List of Pages		Edition 1.1.83

Page	Edition	Edition	Edition	Edition	Edition	Edition	Edition
0-1	1.1.83						
0-2	1.1.83						
0-3	1.1.83						
0-4	1.1.83						
0-5	1.1.83						
0-6	1.1.83						
1-1	1.1.83						
1-2	1.1.83						
1-3	1.1.83						
1-4	1.1.83						
1-5	1.1.83						
1-6	1.1.83						
1-7	1.1.83						
1-8	1.1.83						
1-9	1.1.83						
1-10	1.1.83						
1-11	1.1.83						
1-12	1.1.83						
2-1	1.1.83						
2-2	1.1.83						
2-3	1.1.83						

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 0-6
Flugzeugbau GmbH	List of Pages		Edition 1.1.83

Page	Edition	Edition	Edition	Edition	Edition	Edition	Edition
3-1	1.1.83						
3-2	1.1.83						
3-3	1.1.83						
3-4	1.1.83						
3-5	1.1.83						
3-6	1.1.83						
3-7	1.1.83						
3-8	1.1.83						
3-9	1.1.83						
3-10	1.1.83						
3-11	1.1.83						
3-12	1.1.83						
3-13	1.1.83						
3-3A	17.9.98	10 1994-001/2					

Qu

Rolladen Schneider Flugzeugbau GmbH	FLIGHT MANUAL Operating Limitations	LS4	Page 1-1
			Edition 1.1.83

General

The LS4 sailplane is designed and approved according to LFSM regulations. The safety margin - ratio of fracture loads to permissible maximum loads which may occur some times - is 1.5 only. This means that fracture loads will be achieved when exceeding permissible load factors by 50%. When exceeding permissible speeds, the safety margin is much lower.

Maximum permissible loads should not be achieved by the pilot's control surface deflections. They result from severe turbulence and the necessary control surface deflections to maintain the desired attitude.

Severe turbulence would include wave rotors, flying in cumulonimbus clouds, dust devils and when crossing mountain ridges in strong winds.

Rolladen Schneider Flugzeugbau GmbH	FLIGHT MANUAL Operating Limitations	LS4	Page 1-2
			Edition 1.1.83

AIRSPPEED LIMITS

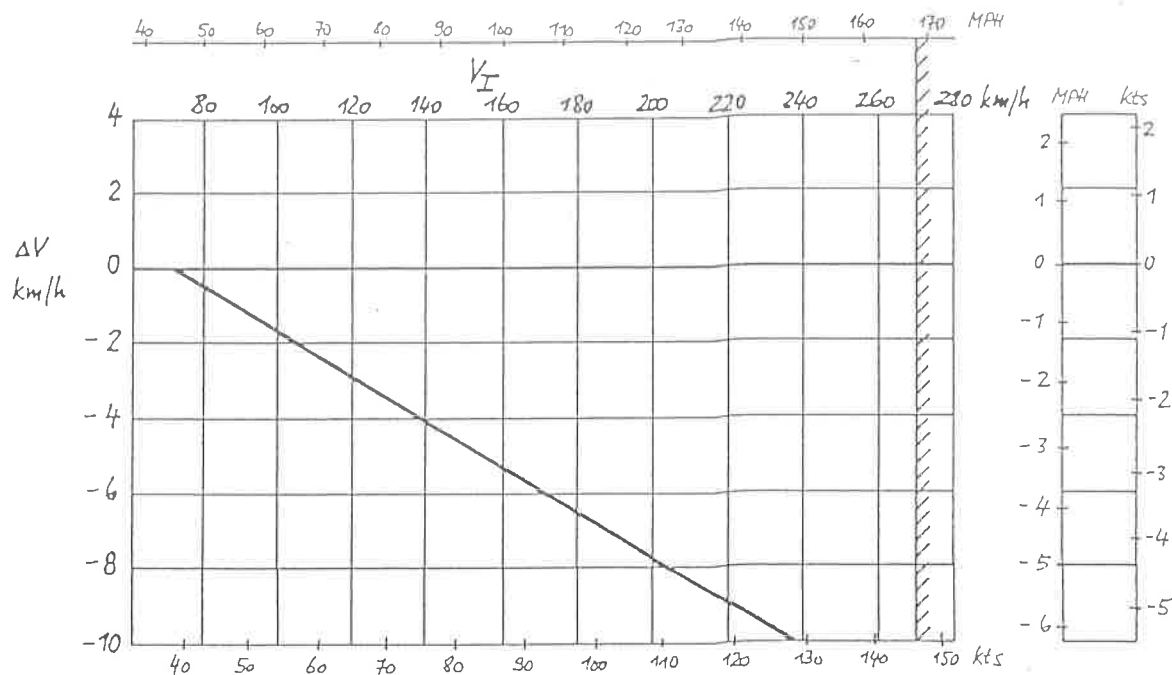
	km/h	kts	MPH
<u>Never exceed (IAS)</u> from sea level up to 2000 m.....	270	146	168
up to 3000 m.....	257	139	160
up to 6000 m.	219	118	136
up to 10000 m.	173	93	107
<u>Maneuvering</u>	180	97	112
<u>Limit Speed</u> in "severe turbulence"	180	97	112
winch launch	130	70	81
aero tow	180	97	112

For "severe turbulence" see page 1-1.

Note: When flying at altitude the lower limit IAS is always authoritative.

POSITION ERROR OF AIRSPEED SYSTEM

$$V_{\text{Cal}} = V_I + \Delta V \quad (\text{Nose pitot, forward fuselage side static})$$



Colour Marking on Airspeed Indicator

- Green Range: 85 - 180 km/h (46 - 97 kts, 53 - 112 MPH)
 Within this speed range it is not possible to overload the sailplane by "severe turbulence" and the necessary maximum control surface deflections to maintain the desired attitude.
- Yellow Range: 180 - 270 km/h (97 - 146 kts, 112 - 168 MPH)
 Within this speed range "severe turbulence" or control surface deflections of more than 1/3 of possible travel may exceed the design limit and should be avoided. Maneuvering loads, gust loads and loads due to control surface deflections should not be encountered simultaneously.
- Red Line: 270 km/h (146 kts, 168 MPH)
 Never exceed up to 6500 ft above MSL flying altitude. For higher altitudes see page 1-2.
- Yellow Triangle: 90 km/h (49 kts, 56 MPH)
 Recommended approach to landing speed without water ballast.

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 1-5
Flugzeugbau GmbH	Operating Limitations		Edition 1.1.83

Weights: Gross Weight 472 kp (1041 lbs)

Maximum Weight of Non-lift Producing Parts 230 kp (507 lbs)

Empty Weight around 235 kp (518 lbs)

Maximum Water Ballast see page 1-8

Maximum Cockpit Load (Pilot and Parachute) 110 kp (242 lbs)

Cockpit load may be limited by weight of non-lift producing parts. See entry on page 1-7.

Minimum Cockpit Load

Pilot and Parachute, no trim ballast, normally 70 kp (154 lbs)

Pilot, Parachute and 3 Trim Weights, normally 55 kp (121 lbs)

Note: Each 2.45 kg trim weight corresponds to 5 kg (11 lbs) of cockpit load.

The sailplane can be trimmed for a different Minimum Cockpit Load. See Maintenance Manual pages 2-2 and 11-1.

For Minimum Cockpit Load see entry on page 1-7 and on placards.

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 1-6
Flugzeugbau GmbH	Operating Limitations		Edition 1.1.83

Position of C.G. in Flight (without water ballast)

Maximum allowable:

Forward C.G. position 225 mm (8.86 in) aft of DP.

Rearward C.G. position 375 mm (14.76 in) aft of DP.

Datum Point (DP): Leading edge of wing at root, when under side of fuselage boom placed horizontal.

Loading water ballast moves inflight C.G. forward. From rearward flight C.G. position, 140 liters (308 lbs, 37 US Gal, 30.8 Imp Gal) shift C.G. approximately 50 mm (1.97 in) forward.

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 1-7
Flugzeugbau GmbH	Operating Limitations		Edition 1.1.83

Cockpit Load (Pilot and Parachute)

New entry with each annual inspection and when changing equipment. Should be calculated in accordance with guide in Maintenance Manual.

Empty Weight	Maximum permiss. Load	Minimum permiss. Load	Fixed fore	Ballast aft	Battery in baggage compartment	in fin	Inspector
242	110 kg	80 kg	/	/	/	/	13. MAI 83 3719

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 1-8
Flugzeugbau GmbH	Operating Limitations		Edition 1.1.83

Water Ballast Limitations

Maximum Capacity 60-70 kg (132-154 lbs) each bag = 120-140 kg (264-308 lbs)

Pilot and Parachute (kg)	Empty Weight (kg)									
	230	235	240	245	250	255	260	265	270	275
70	140	140	140	140	140	140	140	137	132	127
75	140	140	140	140	140	140	137	132	127	122
80	140	140	140	140	140	137	132	127	122	117
85	140	140	140	140	137	132	127	122	117	112
90	140	140	140	137	132	127	122	117	112	107
95	140	140	137	132	127	122	117	112	107	102
100	140	137	132	127	122	117	112	107	102	97
105	137	132	127	122	117	112	107	102	97	92
110	132	127	122	117	112	107	102	97	92	87

Example: When empty weight is 240 kg (529 lbs) and pilot and parachute weight is 95 kg (209 lbs), maximum permissible water ballast is 137 kg (302 lbs).

See page 1-9 for limitations in lbs.

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 1-9
Flugzeugbau GmbH	Operating Limitations		Edition 1.1.83

Water Ballast Limitations

Maximum capacity 120-140 kg (264-308 lbs)

Pilot and Parachute (lbs)	Empty Weight (lbs)										Pilot and Parachute (kg)
	507	518	529	540	551	562	573	584	595	606	
154	309	309	309	309	309	309	309	302	291	280	70
165	309	309	309	309	309	309	302	291	280	269	75
176	309	309	309	309	309	302	291	280	269	258	80
187	309	309	309	309	302	291	280	269	258	247	85
198	309	309	309	302	291	280	269	258	247	236	90
209	309	309	302	291	280	269	258	247	236	225	95
220	309	302	291	280	269	258	247	236	225	214	100
231	302	291	280	269	258	247	236	225	214	203	105
243	291	280	269	258	247	236	225	214	203	192	110
	230	235	240	245	250	255	260	265	270	275	
	Empty Weight (kg)										

Example: When empty weight is 529 lbs and pilot and parachute weight is 209 lbs, maximum permissible water ballast is 302 lbs.

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 1-10
Flugzeugbau GmbH	Operating Limitations		Edition 1.1.83

Baggage Limitations

Baggage compartment should be used for soft and light materials which would not obstruct the pilot after negative accelerations or injure the pilot in crash landings. Maximum weight of soft items 5 kg (11 lbs).

Installation of batteries, radios and barographs should be done in accordance with instructions in Maintenance Manual.

Weight Compensation for Pilots not meeting Minimum Weight Requirements: Removable compensating trim weights can be fastened with a knurled nut to a threaded rod ahead of the rudder pedals. One weight of 2.45 kg (5.4 lbs) replaces insufficiency of pilot weight of 5 kg (11 lbs):

Tire Pressure: 3 - 3.5 bar (43 - 50 psi) in mainwheel
2.5 bar (36 psi) in tailwheel

Rolladen Schneider Flugzeugbau GmbH	FLIGHT MANUAL Operating Limitations	LS4	Page 1-11 Edition 1.1.83
--	--	-----	-----------------------------

Aerobatics: Aerobic manoeuvres including spins not approved

Structural Limitations in Flight:

At 180 km/h (97 kts, 112 MPH) 5.3 G positive and 2.65 G negative.

At 270 km/h (146 kts, 168 MPH) 4.0 G positive and 1.5 G negative.

VFR-Flight: Permitted

Cloud Flying: Permitted, if aircraft is appropriately equipped (see: Minimum Equipment)

Minimum equipment

Normal operation

1. Airspeed Indicator: Scale from 50 to 300 Km/h (27-162 kts, 31-186 MHP)

2. Altimeter

Rolladen Schneider Flugzeugbau GmbH	FLIGHT MANUAL Operating Limitations	LS4	Page 1-12 Edition 1.1.83
--	--	-----	-----------------------------

In addition for CLOUD FLYING

1. Turn and bank indicator
2. Variometer
3. Magnetic compass

Note: see also page 12-1 of Maintenance Manual, for additional Equipment

Break Away Link in Tow Rope: for winch and aero tow max. 600 Kg (1323 lbs).

Sideslip

Sideslip speed range: up to 180 km/h (97 kts, 112 MPH)

During sideslip rudder control force decreases to almost zero force.

For a straight and steady sideslip 100% rudder and between 50 to 75% aileron deflection are necessary.

Degradation in airspeed system goes down to zero airspeed indication. Depending on airspeed indicator, negative values may be indicated. (Fuselage nose pitot and forward side statics used).

Rolladen Schneider Flugzeugbau GmbH	FLIGHT MANUAL Emergency Procedures	LS4	Page 2-1
			Edition 1.1.83

Stalls:

Before entering stall, light tail shudder can be noticed. The effectiveness of the ailerons is reduced by about 50%, and the rate of sink increases considerably. The stall should be terminated through downward deflection of the elevator.

Spins:

If a stall is exaggerated through further upward deflection of the elevator, depending on C.G. position, the aircraft may spin.

Termination of spin by downward deflection of elevator, pronounced deflection of rudder opposite to spin direction and careful pull out.

Altitude loss due to termination of spin is about 50 m (150 ft).

Rolladen Schneider Flugzeugbau GmbH	FLIGHT MANUAL Emergency Procedures	LS4	Page 2-2
			Edition 1.1.83

Limitation of High Speed Flight

If there are indications while flying under large cloudbank, or while flying in clouds, that the maximum permissible rough air speed will be exceeded, divebrakes should be deployed carefully before 180 km/h (97 kts, 112 MPH) is reached. Divebrakes can also be deployed in emergencies up to a speed of 270 km/h (146 kts, 168 MPH). However, one should remember that after unlocking divebrakes will open rapidly and cause uncomfortable negative accelerations.

When divebrakes are deployed during descent after high altitude wave flights a speed of 180 km/h (97 kts, 112 MPH) should not be exceeded because of possible severe turbulence.

Emergency Canopy Release

Pull red handle on right side of instrument panel to release forward canopy hinge, then open canopy locks on both sides of cockpit and push canopy off.

Reverse sequence possible also.

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 2-3
Flugzeugbau GmbH	Emergency Procedures		Edition 1.1.83

Rain:

Raindrops will change the airfoil and will reduce performance. Therefore, the approach speed to a landing should be increased by at least 10 km/h (5 kts, 6 MPH). To improve visibility canopy window should be opened when flying in rain.

Icing:

Water ballast should be drained when there is danger of freezing to avoid ice formation at the tail or one sided freezing of the water ballast. When there is danger of icing, control surfaces should be moved continuously. To improve visibility, canopy window should be opened.

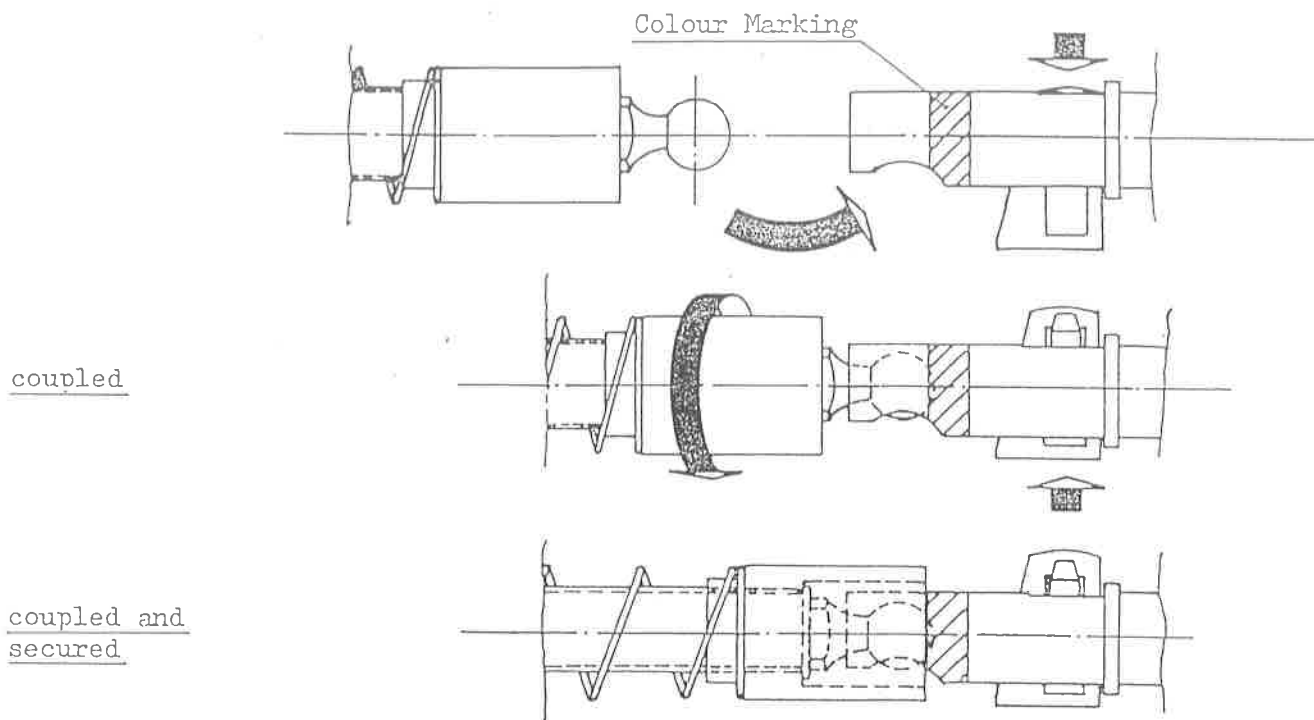
Rolladen Schneider	FLIGHT MANUAL	LS4	Page 3-1
Flugzeugbau GmbH	Normal Procedures		Edition 1.1.83

Assembly

1. Clean and grease all pins and matching holes.
2. Insert left spar end into fuselage and watch for angle of dihedral.
3. Insert right spar end into fuselage and watch for angle of dihedral.
4. Insert main pins when holes are lined up correctly.
5. Secure main pins.
6. Connect dive brake system with ball snap joints.
7. Secure ball snap joints of dive brake system by turning LS-sleeve over joint as far as possible. Check securing by trying to disassemble connectors. See also drawing on page 3-2.
8. Connect aileron system with ball snap joints.
9. Secure ball snap joints of aileron system by turning LS-sleeve over joint as far as possible. Check securing by trying to disassemble connectors. See also drawing on page 3-2.
10. Check control system connections visually using built in mirrors and colour marking.

Rolladen Schneider Flugzeugbau GmbH	FLIGHT MANUAL Normal Procedures	LS4	Page 3-2
			Edition 1.1.83

Assembly of ball snap joints (dive brake and aileron system):



German patent for LS-sleeves applied

Rolladen Schneider Flugzeugbau GmbH	FLIGHT MANUAL Normal Procedures	LS4	Page 3-3
			Edition 1.1.83

Assembly continued:

11. Insert battery into vertical tail fin. (if listed in the equipment list)
12. Install horizontal tail and secure with slotted nut against tapered bolts using a suitable coin until red marking on mounting bracket is invisible.
13. Install total energy tube, battery (if not already in vertical tail fin) and barograph. Connect automatic parachute to red marked portion at main bulkhead using special loop only.
14. Tape upper and lower wing fuselage connection and access hole on upper side of horizontal tail.
15. Fill water ballast and check proper dumping.

Disassembly:

Reverse assembly sequence, except before removing main pins turn LS-sleeves free of ball snap joints and disconnect aileron and divebrake systems.

Rolladen Schneider Flugzeugbau GmbH	FLIGHT MANUAL Normal Procedures	LS4	Page 3-4
			Edition 1.1.83

Pre-flight Checks:

1. Check water drain holes and check for leaks in water ballast tanks.
2. Check static ports, pitot and total energy tube for clogging.
3. Check tire pressure in wheel (3 - 3.5 bar, 43 - 50 psi).
in tail wheel (2.5 bar, 36 psi)
4. Check wheel brake effectiveness.
5. Check tow release.
6. Check emergency canopy release.
7. Check weight and balance, especially minimum and maximum cockpit loads,
trim weights and battery position.
8. Check instruments including radio.
9. Adjust backrest and rudder pedals.
10. Check papers.
11. Before take off carry out check in accordance with check list on right side of cockpit.

Rolladen Schneider Flugzeugbau GmbH	FLIGHT MANUAL Normal Procedure	LS4	Page 3-5
			Edition 1.1.83

Post-flight Checks

1. Remove insects and dust.
2. If moisture has accumulated in divebrake boxes, remove with sponge.
3. Ensure that water ballast has been dumped.

Adjustment of Rudder Pedals

Adjustment is possible in flight and on the ground. Release pressure of pedals and unlock pawl pulling release handle. Push pedals forward with feet into desired position and lock. To move pedals rearward, pull pedals with release handle into desired position and lock.

Adjustment of Backrest

Adjustment of lower backrest bracket is possible only on the ground and allows for fitting of various types of parachutes. Pull cable through slot in backrest for unlocking.

Adjustment of slope of backrest is possible during flight. Be careful that locking pin catches in slot on right cockpit rim properly.

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 3-6
Flugzeugbau GmbH	Normal Procedures		Edition 1.1.83

Automatic Parachute Static Line

Attach to red main bulkhead portion at left rear of pilot using special loop only.

Landing Gear

Landing gear can be extended or retracted in the whole permitted speed range.

A brisk movement of the gear handle facilitates gear retraction.

Gear handle forward = gear up

Gear handle rearward = gear down

Wheel Brake

Wheel brake is coupled to rudder pedals support and should be activated with heels. The wheel brake is an emergency brake and should be used sparingly.

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 3-7
Flugzeugbau GmbH	Normal Procedures		Edition 1.1.83

Trim System

Trim locking lever is fitted to control stick. Pulling the locking lever frees trim lever at left cockpit side, which allows trimming stick forces to zero or trimming for desired speeds: forward for nose down, rearward for nose up.

Release locking lever to fix trim setting. Position of trim lever relative to neutral mark indicates trim setting.

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 3-8
Flugzeugbau GmbH	Normal Procedures		Edition 1.1.83

Water Ballast

Each tank holds about 70 liters (18.5 US gallons, 15.4 Imp. gallons).

Maximum permissible load should be taken from table on pages 1-8 or 1-9.

Filling of Water Tanks: Open appropriate dump valve and lay wing tip on the ground. Using connection hose, suck residual air from water bag. Subsequently, fill desired amount of water. During filling disconnect funnel several times to allow residual air to get out. Never use more than 0.1 bar water pressure (funnel max. 1 m (3.3 ft) above wing). Close valve and repeat same procedure on other wing.

Dumping of Water: Open both valves simultaneously. 10 liters will be dumped in approximately 10 seconds. Unequal dumping may be indicated when aircraft with free stick rolls around longitudinal axis. This necessitates early counteraction during landing roll.

Note: Flights with water ballast when temperatures are below freezing should be made only if water is dumped after landing. When tanks are partially filled, keep wings horizontal before take off to avoid unequal water distribution.

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 3-9
Flugzeugbau GmbH	Normal Procedures		Edition 1.1.83

Winch Launch

Adjust backrest properly (see page 3-5) and tighten seat belt harness to avoid sliding backwards during acceleration and steep climb.

Trim slightly forward, trim lever just before reference mark.

Ask winch operator to avoid brisk acceleration. The higher the starting acceleration, the higher is the pitch up tendency.

When the tow cable tightens, use wheel brake to avoid rolling over tow cable. Pronounced forward stick pressure is required in transition arc.

Minimum winch launch speed without water ballast 90 km/h (49 kts, 56 MPH)
with water ballast ... 100 km/h (54 kts, 62 MPH)

Rolladen Schneider Flugzeugbau GmbH	FLIGHT MANUAL Normal Procedures	LS4	Page 3-10
			Edition 1.1.83

Aero Tow

Trim slightly forward, trim lever just before reference mark.

Additional aileron effectiveness during initial take off roll may be achieved by deploying divebrakes. Retract divebrakes before leaving ground.

When tow rope tightens, use wheel brake to avoid rolling over tow rope.

Minimum tow speed without water ballast 100 km/h (54 kts, 62 MPH)
with water ballast 120 km/h (65 kts, 75 MPH)

Permissible Tow Rope Length: 30 - 80 m (100 - 260 ft)

Either nose or C.G. release can be used. While using the C.G. release, the landing gear may not be retracted during tow, because release is fitted to landing gear.

Rolladen Schneider Flugzeugbau GmbH	FLIGHT MANUAL Normal Procedures	LS4	Page 3-11
			Edition 1.1.83

Free Flight

Stall Speed is between 65 to 70 km/h (35-38 kts, 40-44 MPH) without water ballast, with full water ballast 75 to 80 km/h (41-43 kts, 47-50 MPH) in straight and level flight.

Note: When flying with empty water tanks, leave dump valves in open position to avoid pressure built up inside tanks at altitude.

Best Glide Angle: between 90 and 100 km/h (49-54 kts, 56-62 MPH)

High Speed Flight: Trim high speeds. Check speed indication regularly to avoid exceeding limit values.

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 3-12
Flugzeugbau GmbH	Normal Procedures		Edition 1.1.83

Landing

It is recommended to dump water ballast before landing.

Approach speed not below 90 km/h (49 kts, 56 MPH) without water ballast and divebrakes fully deployed.

Divebrakes allow control of glide angle within wide limits. Slipping is not necessary to control glide path. Additionally, deploying divebrakes during slipping makes the LS4 nose heavy. Thus, slipping with divebrakes deployed should be avoided, especially at low speeds and with forward C.G. positions, because of limited elevator effectiveness.

Rolladen Schneider	FLIGHT MANUAL	LS4	Page 3-13
Flugzeugbau GmbH	Normal Procedures		Edition 1.1.83

High Altitude Flights

Increasing altitude yields higher true airspeed than indicated airspeed and this difference increases with increasing altitude. This does not influence loads on the structure, which means that colour markings on airspeed indicator are valid unless limited by red lines.

However, as flutter limitation depends on true airspeed, this should never be beyond 270 km/h (146 kts, 168 MPH) up to 2000 m (6600 ft) above MSL.

Using table on page 1-2, maximum permissible airspeeds depending on altitude, the pilot is able to avoid flying faster than true airspeed of 270 km/h (146 kts, 168 MPH).

Example: Indicated airspeed of 219 km/h (118 kts, 136 MPH) at 6000 m (19700 ft) altitude corresponds to 270 km/h (146 kts, 168 MPH) true airspeed.

Computer di volo CAMBRIDGE



Organigramma degli Schermi

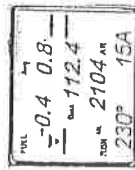
(sinistra e destra dello schermo principale)
versione : LNAV 5.8
SNAV 7.9 e 8.9

Abbrev. E1 schermo iniziale #1
SG schermo principale
@ (indicazione) valore configurabile
4d schermata #4 destra
posizione del SG @
opzione

Situazione GPS:

GPS (OK) GPS (WAIT)
Senza GPS ,ON GPS ON (aspetta)

GPS (OK)
GPS con fix (>3 sat.)



SG 2" Vettore vento/distanza prima del traguardo
<A sinistra del SG1>
"Solifahrt" velocità adattata
Efficienza effettiva @
@ valore medio di questa termica
@ valore medio degli ultimi 30 sec.
Vettore vento (velocità e direzione e moduli)
Distanza del traguardo o
distanza totale prima dell'ultimo pilone
@ Quota necessaria / delta per il traguardo
<Situazione GPS fino al fix>

2S <dati calcolo del vettore vento>
tempi di risposta (dopo calcolo in min. / sec)
@ regolazione

3S <polare sporca (moscerini)>
influenza sulla polare in %: 100% = pulita

4S <Carico alare>
inserire in scatti 10% max. in CONFIGURE
100% = pieno.

5S <Altimetro in mt @ e mbar @ QNH>
correggere in volo quando cambia la pressione

6S <Altimetro in piedi e mbar @ QNH >
correggere in volo quando cambia la pressione.

7S <G - metro >
valore simultaneo e valore del giorno max.
(serve per allarme stalli e cambio automatico
per velocità ottimale =Solifahrt / vano)

8S <Stato della carica della batteria (Volt)>

ON all'accensione appare:

E1 versione software

E2 regolazione in QNH quota di decollo con
Pressione (su / giù). Batteria carica

Premere:

GO

(Questo schermo è presente solo per il LNAV senza
sensore per temperatura esterna)
E3 temperatura in Quota: (sensore °)
inserire valore del giorno a 1000m (su / giù).

GO

SG 1" in volo dopo la partenza <in centro>
"Solifahrt" velocità ottimale
Efficienza (planata sopra / sotto)
@ valore medio di questa termica
@ valore medio degli ultimi 30 sec.
Componente istantaneo del vento (sulla rotta)
Distanza per il prossimo pilone
Quota QNH
Con GO tempo di volo
<Situazione GPS fino al fix>

SG 3" Planata Finale <A destra del SG1>
"Solifahrt" velocità ottimale
Efficienza effettiva
@ Efficienza/valore medio di questa termica
@ valore m/s degli ultimi 30 sec.
Distanza per waypoint o finishline
@ Altezza sopra/sotto planata in m
valore Mc Cready
Componente medio del vento (sulla rotta)
con modalità (automatico o manuale) e tendenza valore
Tempo del volo (press GO)
<Situazione del GPS prima di un fix>

2D <Quota necessaria per il traguardo e
distanza dal traguardo =Goal alt.
quota QFE traguardo più quota sicurezza

3D <Quota traguardo> (goal alt.)
arrivo sulla quota del traguardo
quota = quota QNH + valore sicurezza
(in 4D)

4D <Quota sicurezza in mt > sopra "Quota
traguardo" >
(goal height = quota sul terreno)
arrivo sulla quota traguardo (in mt)
valore sicurezza in m @

5D <Statistica ascendenze
salita media del volo. Metri guadagnati in
termica

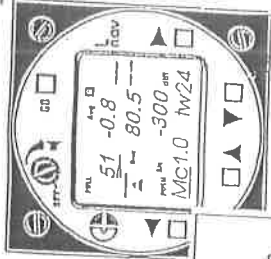
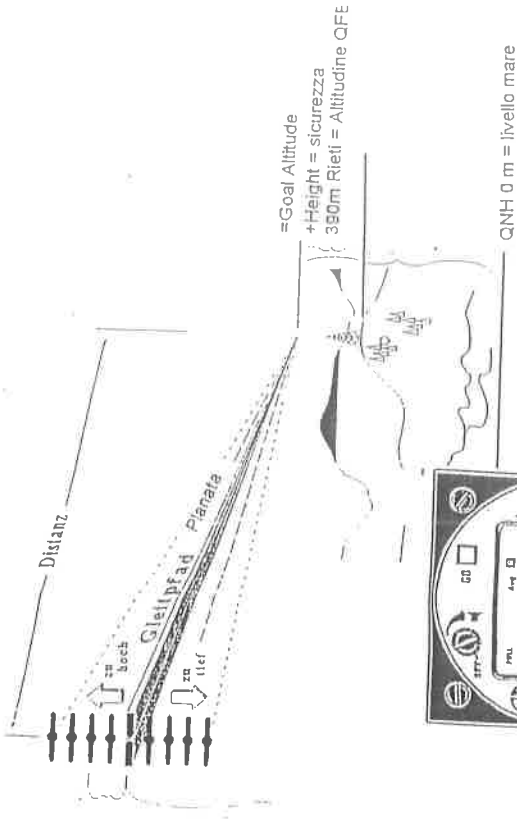
6D <Statistica spirali>
% tempo passato in spirale
totale metri guadagnati
metri guadagnati dopo RESET

7D <Statistica dopo "Reset" (reset: yes / no)
annulla (RESET) valori precedenti
< alla partenza o una parte del volo>

8D <Valori di fondo scala di vario e audio
Scala: x1=5m/s x0.5=2.5m/s x2= 10m/s

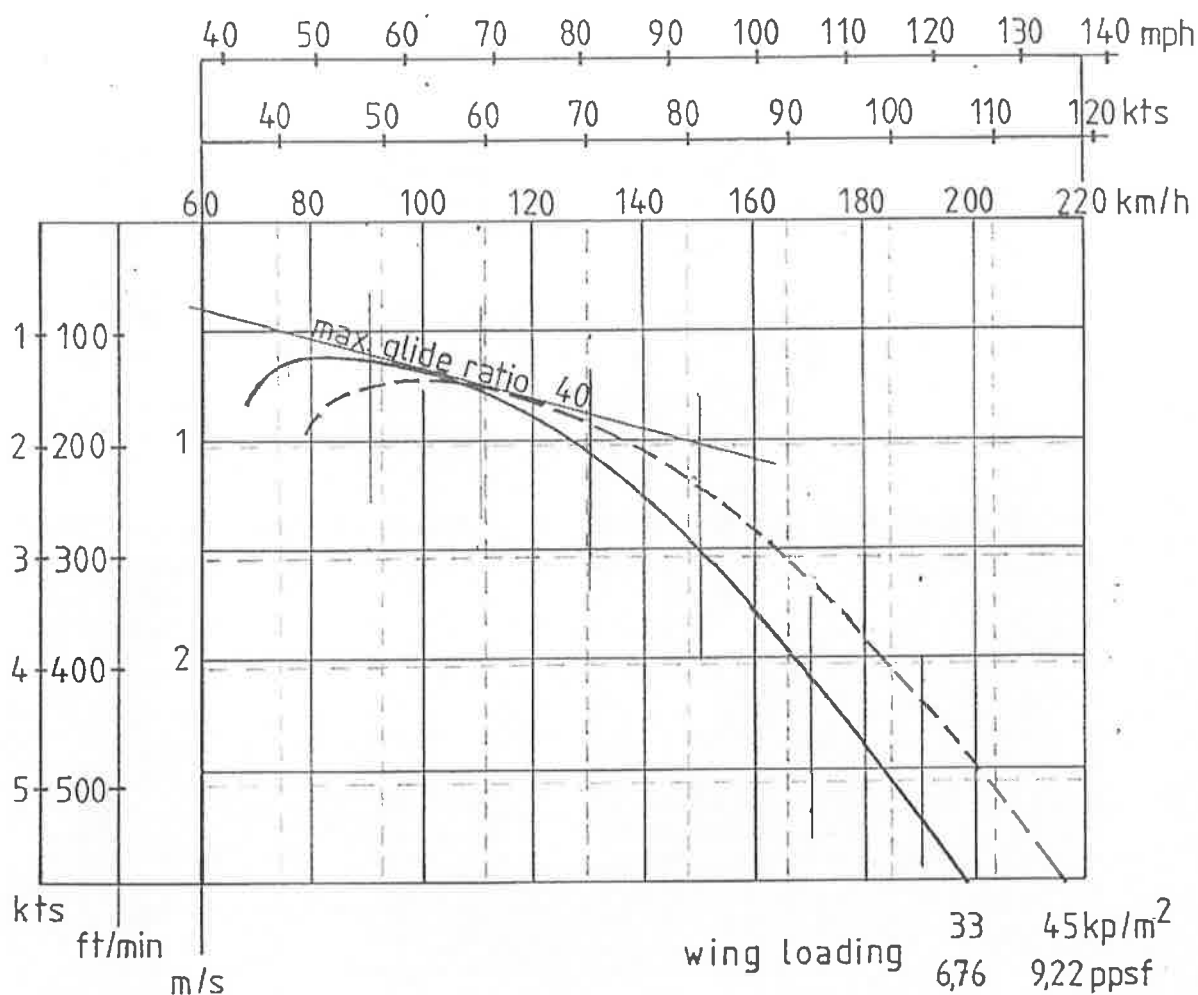
CONFIGURE + CALIBRATE

@ = valori configurabili. E" possibile configurare anche durante il volo:
Nella schermata "Configure" o "Calibrate" premere contemporaneamente GO
+ freccia destra. Possibilità di configurazione: vedi pagina della configurazione.



FLIGHT POLAR

The flight polar gives forward speed versus sinking speed related to wing loading.



The flight polar is valid for "clean" wing.

Insects and raindrops on wing decrease performance and handling.
see page 4-8 Landing.

